SEQUENCE LISTING

<100>   GENERAL INFORMATION
<110>
<120> METHOD OF DETERMINING A BACTERIUM SPECIES
<160> NUMBER OF SEQ ID NOS: 145

<200>   SEQUENCE CHARACTERISTICS:
<210>   SEQ ID NO 1
<211>   LENGTH   1383
<212>   TYPE: DNA
<213>   ORGANISM:  Mycobacterium abscessus
<400>   SEQUENCE 1
      1 acatgcaagt cgaacgggaa aggcccttcg gggtactcga gtggcgaacg ggtgagtaac
     61 acgtgggtga tctgccctgc actctgggat aagcctggga aactgggtct aataccggat
    121 aggaccacac acttcatggt gagtggtgca aagcttttgc ggtgtgggat gagcccgcgg
    181 cctatcagct tgttggtggg gtaatggccc accaaggcga cgacgggtag ccggcctgag
    241 agggtgaccg gccacactgg gactgagata cggcccagac tcctacggga ggcagcagtg
    301 gggaatattg cacaatgggc gcaagcctga tgcagcgacg ccgcgtgagg gatgacggcc
    361 ttcgggttgt aaacctcttt cagtagggac gaagcgaaag tgacggtacc tacagaagaa
    421 ggaccggcca actacgtgcc agcagccgcg gtaatacgta gggtccgagc gttgtccgga
    481 attactgggc gtaaagagct cgtagtggt ttgtcgcgtt gttcgtgaaa actcacagct
    541 taactgtggg cgtgcgggcg atacgggcag actagagtac tgcaggggag actggaattc
    601 ctggtgtagc ggtggaatgc gcagatatca ggaggaacac cggtggcgaa ggcgggtctc
    661 tgggcagtaa ctgacgctga ggagcgaaag cgtgggtagc gaacaggatt agataccctg
    721 gtagtccacg ccgtaaacgg tgggtactag gtgtgggttt ccttccttgg gatccgtgcc
    781 gtagctaacg cattaagtac cccgcctggg gagtacggtc gcaagactaa aactcaaagg
    841 aattgacggg ggcccgcaca agcggcggag catgtggatt aattcgatgc aacgcgaaga
    901 accttacctg ggtttgacat gcacaggacg tatctagaga taggtattcc cttgtggcct
    961 gtgtgcaggt ggtgcatggc tgtcgtcagc tcgtgtcgtg agatgttggg ttaagtcccg
   1021 caacgagcgc aacccttgtc ctatgttgcc agcgggtaat gccggggact cgtaggagac
   1081 tgccggggtc aactcggagg aaggtgggga tgacgtcaag tcatcatgcc ccttatgtcc
   1141 agggcttcac acatgctaca atggccagta cagagggctg cgaagccgta aggtggagcg
   1201 aatcccttaa agctggtctc agttcggatt ggggtctgca actcgacccc atgaagtcgg
   1261 agtcgctagt aatcgcagat cagcaacgct gcggtgaata cgttcccggg ccttgtacac
   1321 accgcccgtc acgtcatgaa agtcggtaac acccgaagcc agtggcctaa ccttttggag
   1381 gga

<200>   SEQUENCE CHARACTERISTICS:
<210>   SEQ ID NO 2
<211>   LENGTH   1454
<212>   TYPE: DNA
<213>   ORGANISM:    Mycobacterium avium
<400>   SEQUENCE 2
      1 gacgaacgct ggcggcgtgc ttaacacatg caagtcgaac ggaaaggcct cttcggaggt
     61 actcgagtgg cgaacgggtg agtaacacgt gggcaatctg ccctgcactt cgggataagc
    121 ctgggaaact gggtctaata ccggatagga cctcaagacg catgtcttct ggtggaaagc
    181 ttttgcggtg tgggatgggc ccgcggccta tcagcttgtt ggtggggtga cggcctacca
    241 aggcgacgac gggtagccgg cctgagaggg tgtccggcca cactgggact gagatacggc
    301 ccagactcct acgggaggca gcagtgggga atattgcaca atgggcgcaa gcctgatgca
    361 gcgacgccgc gtgggggatg acggccttcg ggttgtaaac ctctttcacc atcgacgaag
    421 gtccgggttt tctcggattg acggtaggtg gagaagaagc accggccaac tacgtgccag
    481 cagccgcggt aatacgtagg gtgcgagcgt tgtccggaat tactgggcgt aaagagctcg
    541 taggtggttt gtcgcgttgt tcgtgaaatc tcacggctta actgtgagcg tgcgggcgat
    601 acgggcagac tagagtactg caggggagac tggaattcct ggtgtagcgg tggaatgcgc
    661 agatatcagg aggaacaccg gtggcgaagg cgggtctctg gcagtaact gacgctgagg

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 721 agcgaaagcg tggggagcga acaggattag ataccctggt agtccacgcc gtaaacggtg
 781 ggtactaggt gtgggtttcc ttccttggga tccgtgccgt agctaacgca ttaagtaccc
 841 cgcctgggga gtacggccgc aaggctaaaa ctcaaaggaa ttgacggggg cccgcacaag
 901 cggcggagca tgtggattaa ttcgatgcaa cgcgaagaac cttacctggg tttgacatgc
 961 acaggacgcg tctagagata ggcgttccct tgtggcctgt gtgcaggtgg tgcatggctg
1021 tcgtcagctc gtgtcgtgag atgttgggtt aagtcccgca acgagcgcaa cccttgtctc
1081 atgttgccag cgggtaatgc cggggactcg tgagagactg ccggggtcaa ctcggaggaa
1141 ggtggggatg acgtcaagtc atcatgcccc ttatgtccag ggcttcacac atgctacaat
1201 ggccggtaca aagggctgcg atgccgtaag gttaagcgaa tccttttaaa gccggtctca
1261 gttcggattg gggtctgcaa ctcgacccca tgaagtcgga gtcgctagta atcgcagatc
1321 agcaacgctg cggtgaatac gttcccgggc cttgtacaca ccgcccgtca cgtcatgaaa
1381 gtcggtaaca cccgaagcca gtggcctaac ccttttggga gggagctgtc gaaggtggga
1441 tcggcgattg ggac
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<200> SEQUENCE CHARACTERISTICS:
<210> SEQ ID NO 3
<211> LENGTH  1421
<212> TYPE: DNA
<213> ORGANISM:  Mycobacterium bovis
<400> SEQUENCE 3

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    1 ggcggcgtgc ttaacacatg caagtcgaac ggaaaggtct cttcggagat actcgagtgg
   61 cgaacgggtg agtaacacgt gggtgatctg ccctgcactt cgggataagc ctgggaaact
  121 gggtctaata ccggatagga ccacgggatg catgtcttgt ggtngaaagc gctttagcgg
  181 tgtgggatga gcccgcggcc tatcagcttg ttggtggggt nacggcctac caaggcgacg
  241 acgggtagcc ggcctgagag ggtgtccggc cacactggga ctgagatacg cccagactc
  301 ctacgggagg cagcagtggg gaatattgca caatgggcgc aagcctgatg cagcgacgcc
  361 gcgtgggggga tgacggcctt cgggttgtaa acctctttca ccatcgacga aggtccgggt
  421 tctctcggat tgacggtagg tggagaagaa gcaccggcca actacgtgcc agcagccgcg
  481 gtaatacgta gggtgcgagc gttgtccgga attactgggc gtaaagagct cgtaggtggt
  541 ttgtcgcgtt gttcgtgaaa tctcacggct taactgtgag cgtgcgggcg atacgggcag
  601 actagagtac tgcaggggag actggaattc ctggtgtagc ggtggaatgc gcagatatca
  661 ggaggaacac cggtgncgaa ggcgggtctc tggcagtaa ctgacgctga ggagcgaaag
  721 cgtggggagc gaacaggatt agataccctg gtngtccacg ccgtaaacg tgggtactag
  781 gtgtgggttt ccttccttgg gatccgtgcc gtagctaacg cattaagtac cccgcctggg
  841 gagtacggcc gcaaggctaa aactcaaagg aattgacggg ggcccgcaca agcggcggag
  901 catgtggatt aattcgatgc aacgcgaaga accttacctg ggtttgacat gcacaggacg
  961 cgtctagaga taggcgttcc cttgtggcct gtgtgcaggt ggtgcatggc tgtcgtcagc
 1021 tcgtgtcgtg agatgttggg ttaagtcccg caacgagcgc aacccttgtc tcatgttgcc
 1081 agcacgtaat ggtgggggact cgtgagagac tgccgggggtc aactcggagg aaggtgggga
 1141 tgacgtcaag tcatcatgcc ccttatgtcc agggcttcac acatgctaca atggccggta
 1201 caaagggctn cgatgccgcg aggttaagcg aatccttaaa agccggtctc agttcggatc
 1261 ggggtctgca actcgacccc gtgaagtcgg agtcgctagt aatcgcagat cagcaacgct
 1321 gcggtgaata cgttcccggg ccttgtacac accgcccgtc acgtcatgaa agtcggtaac
 1381 acccgaagcc agtggcctaa ccccttgggag ggagctgtcg a
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<200> SEQUENCE CHARACTERISTICS:
<210> SEQ ID NO 4
<211> LENGTH  1439
<212> TYPE: DNA
<213> ORGANISM:  Mycobacterium chelonae
<400> SEQUENCE 4

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    1 gacgaacgct ggcggcgtgc ttaacacatg caagtcgaac gggaaaggcc cttcggggta
   61 ctcgagtggc gaacgggtga gtaacacgtg gtgatctgc cctgcactct gggataagcc
  121 tgggaaactg ggtctaatac cggataggac cacacacttc atggtgagtg gtgcaaagct
  181 tttgcggtgt gggatgagcc cgcggcctat cagcttgttg gtggggtaat ggcccaccaa
  241 ggcgacgacg ggtagccggc ctgagagggt gaccggccac actgggactg agatacggcc
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 241 ggcgacgacg ggtagccggc ctgagagggt gaccggccac actgggactg agatacggcc
 301 cagactccta cgggaggcag cagtggggaa tattgcacaa tgggcgcaag cctgatgcag
 361 cgacgccgcg tgagggatga cggccttcgg gttgtaaacc tctttcagta gggacgaagc
 421 gaaagtgacg gtacctacag aagaaggacc ggccaactac gtgccagcag ccgcggtaat
 481 acgtagggtc cgagcgttgt ccggaattac tgggcgtaaa gagctcgtag gtggtttgtc
 541 gcgttgttcg tgaaaactca cagcttaact gtgggcgtgc gggcgatacg gcagactag
 601 agtactgcag gggagactgg aattcctggt gtagcggtgg aatgcgcaga tatcaggagg
 661 aacaccggtg gcgaaggcgg gtctctgggc agtaactgac gctgaggagc gaaagcgtgg
 721 gtagcgaaca ggattagata ccctggtagt ccacgccgta aacggtgggt actaggtgtg
 781 ggtttccttc cttgggatcc gtgccgtagc taacgcatta agtaccccgc ctggggagta
 841 cggtcgcaag actaaaactc aaaggaattg acgggggccc gcacaagcgg cggagcatgt
 901 ggattaattc gatgcaacgc gaagaacctt acctgggttt gacatgcgca ggacgtatct
 961 agagataggt attcccttgt ggcctgcgtg caggtggtgc atggctgtcg tcagctcgtg
1021 tcgtgagatg ttgggttaag tcccgcaacg agcgcaaccc ttgtcctatg ttgccagcgg
1081 gtaatgccgg ggactcgtag gagactgccg gggtcaactc ggaggaaggt ggggatgacg
1141 tcaagtcatc atgcccctta tgtccaggct ttcacacatg ctacaatggc cagtacagag
1201 ggctgcgaag ccgcaaggtg gagcgaatcc cttaaagctg gtctcagttc ggattggggt
1261 ctgcaactcg accccatgaa gtcggagtcg ctagtaatcg cagatcagca acgctgcggt
1321 gaatacgttc ccgggccttg tacaccgcc cgtcmcgtc atgaaagtcg gtaacacccg
1381 aagccagtgg cctaaccttt tggagggagc tgtcgaaggt gggatcggcg attgggacg
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<200>    SEQUENCE CHARACTERISTICS:
<210>    SEQ ID NO 5
<211>    LENGTH  1482
<212>    TYPE: DNA
<213>    ORGANISM:  Mycobacterium farcinogenes
<400>    SEQUENCE 5

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    1 cgaacgctcg cggcgtgctt aacacatgca agtcgaacgg aaaggccctt cggggtactc
   61 gagtggcgaa cgggtgagta acacgtgggt gatctgccct gcactttggg ataagcctgg
  121 gaaactgggt ctaataccgg ataggaccac gcgcttcatg gtgtgtggtg gaaagctttt
  181 gcggtgtggg atgggcccgc ggcctatcag cttgttggtg gggtaatggc ctaccaaggc
  241 gacgacgggt agccggcctg agaggtgac cggccacact gggactgaga tacgcccag
  301 actcctacgg gaggcagcag tggggaatat tgcacaatgg cgcaagcct gatgcagcga
  361 cgccgcgtga gggatgacgg ccttcgggtt gtaacctct tcaataggg acgaagcgca
  421 agtgacggta cctatagaag aaggaccggc caactacgtg ccagcagccg cggtaatacg
  481 tagggtccga gcgttgtccg gaattactgg gcgtaaagag ctcgtaggtg gtttgtcgcg
  541 ttgttcgtga aaactcacag cttaactgtg ggcgtgcggg cgatacggc agactagagt
  601 actgcagggg agactggaat tcctggtgta gcggtggaat gcgcagatat caggaggaac
  661 accggtggcg aaggcgggtc tctggcagt aactgacgct gaggagcgaa agcgtggggga
  721 gcgaacagga ttagataccc tggtagtcca cgccgtaaac ggtgggtact aggtgtgggt
  781 ttccttcctt gggatccgtg ccgtagctaa cgcattaagt accccgcctg gggagtacgg
  841 ccgcaaggct aaaactcaaa ggaattgacg ggggcccgca caagcggcgg agcatgtgga
  901 ttaattcgat gcaacgcgaa gaaccttacc tgggtttgac atgcacagga cgccagtaga
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 1021 tgagatgttg ggttaagtcc cgcaacgagc gcaaccttg tctcatgttg ccagcacgtt
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 1141 agtcatcatg ccccttatgt ccaggcttc acacatgcta caatggccgg tacaaagggc
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 1261 gcaactcgac cccgtgaagt cggagtcgct agtaatcgca gatcagcaac gctgcggtga
 1321 atacgttccc gggccttgta caccgcccc gtcacgtcat gaaagtcggt aacacccgaa
 1381 gccggtggcc taacccttgt ggagggagcc gtcgaaggtg gatcggcga ttgggacgaa
 1441 gtcgtaacaa ggtagccgta ccggaaggtg cggctggatc ac
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<200>    SEQUENCE CHARACTERISTICS:
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<211>    LENGTH  1449

<212> TYPE: DNA
<213> ORGANISM: Mycobacterium fortuitum
<400> SEQUENCE 6

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  61 acgggtgagt aacacgtggg tgatctgccc tgcactttgg gataagcctg ggaaactggg
 121 tctaataccg aatatgaccg cgcacttcct ggtgtgtggt ggaaagcttt tgcggtgtgg
 181 gatgggcccg cggcctatca gcttgttggt ggggtaatgg cctaccaagg cgacgacggg
 241 tagccggcct gagagggtga ccggccacac tgggactgag atacggccca gactcctacg
 301 ggaggcagca gtggggaata ttgcacaatg ggcgcaagcc tgatgcagcg acgccgcgtg
 361 agggatgacg ccttcgggt tgtaaacctc tttcaatagg gacgaagcgc aagtgacggt
 421 acctatagaa gaaggaccgg ccaactacgt gccagcagcc gcggtaatac gtagggtccg
 481 agcgttgtcc ggaattactg ggcgtaaaga gctcgtaggt ggtttgtcgc gttgttcgtg
 541 aaaactcaca gcttaactgt gggcgtgcgg cgatacggg cagactagag tactgcaggg
 601 gagactggaa ttcctggtgt agcggtggaa tgcgcagata tcaggaggaa caccggtggc
 661 gaaggcgggt ctctgggcag taactgacgc tgaggagcga aagcgtgggg agcgaacagg
 721 attagatacc ctggtagtcc acgncgtaaa cggtgggtac taggtgtggg tttccttcct
 781 tgggatccgt gccgtagcta acgcattaag tacccgcct ggggagtacg gccgcaaggc
 841 taaaactcaa agaaattgac gggggnccgc acaagcggcg gagcatgtgg attaattcga
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 961 tcccttgtgg cctgtgtgca ggtggtgcat ggctgtcgtc agctcgtgtc gtgagatgtt
1021 gggttaagtc ccgcaacgag cgcaaccctt atcttatgtt gccagcgcgt aatggcgggg
1081 actcgtgaga gactgccggg gtcaactcgg aggaaggtgg ggatgacgtc aagtcatcat
1141 gccccttatg tccagggctt cacacatgct acaatggccg gtacaaaggg ctgcgatgcc
1201 gtgaggtgga gcgaatcctt tcaaagccgg tctcagttcg gatcggggtc tgcaactcga
1261 ccccgtgaag tcggagtcgc tagtaatcgc agatcagcaa cgctgcggtg aatacgttcc
1321 cgggccttgt acacaccgcc cgtcacgtca tgaaagtcgg taacacccga gccggtggc
1381 ctaacccttg tggagggagc cgtcgaaggt gggatcggcg attgggacga agtcgtaaca
1441 aggtagccg
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<200> SEQUENCE CHARACTERISTICS:
<210> SEQ ID NO 7
<211> LENGTH 1461
<212> TYPE: DNA
<213> ORGANISM: Mycobacterium gordonae
<400> SEQUENCE 7

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   1 ggcggcgtgc ttaacacatg caagtcgaac ggtaaggccc ttcgggntac acgagtggcg
  61 aacgggtgag taacacgtgg gtaatctgcc ctgcacatcg gataagcct gggaaactgg
 121 gtctaatacc gaataggacc acaggacaca tgtcctgtgg tggaaagctt ttgcggtgtg
 181 ggatgggccc gcggcctatc agcttgttgg tggggtgatg gcctaccaag cgacgacgg
 241 gtagccggcc tgagagggtg tccggccaca ctgggactga gatacggccc agactnctac
 301 gggaggcagc agtggggaat attgcacaat gggcgaaagc ctgatgcagc gacgccgcgt
 361 gggggatgac ggccttcggg ttgtaaacct ctttcaccat cgacgaaggt ccgggttttc
 421 tcgggctgac ggtaggtgga gaagaagcac cggccaacta cgtgccagca gccgcgntaa
 481 tacgtagggt gcgagcgttg tccggaatta ctgggcgtaa agagctcgta ggtggtttgt
 541 cgcgttgttc gtgaaatctc acggcttaac tgtgagcgtg cggncgatac gggcagactt
 601 gagtactgca ggggagactg gaattcctgg tgtagcggtg gaatgcgcag atatcaggag
 661 gaacaccggt ggcgaaggcg ggtctctggg cagtaactga cgctgaggag cgaaagcgtg
 721 gggagcgaac aggattagat accctggtag tccacgncgt aaacggtggg tactaggtgt
 781 gggtttcctt ccttgggatc cgtgccgtag ctaacgcatt aagtaccccg cctggggagt
 841 acggcngcaa ggctaaaact caaagaaatt gacggggggnc cgcacaagcg cggagcatg
 901 tggattaatt cgatgcaacg cgaagaacct tacctgggtt tgacatgcac aggacgccgg
 961 cagagatgtc ggttcccttg tggcctgtgt gcaggtggtg catgnctgtc gtcagctcgt
1021 gtcgtgagat gttgggttaa gtcccgcaac gagcgcaacc cttgtctcat gttgccagcg
1081 ggtaatgccg gggactcgtg agagactgcc ggggtcaact cggaggaagg tggggatgac
1141 gtcaagtcat catgccccct atgtccaggg cttcacacat gctacaatgg ccggtacaaa
1201 gggctgcgat gccgcgaggt taagcgaatc cttttaaagc cggtctcagt tcggatcggg
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1261 gtctgcaact cgaccccgtg aagtcggagt cgctagtaat cgcagatcag caacgctgcg
1321 gtgaatacgt tcccgggcct tgtacacacc gcccgtcacg tcatgaaagt cggtaacacc
1381 cgaagccagt ggcctaacct ttgggaggga gctgtcgaag gtgggatcgg cgattgggac
1441 gaagtcgtaa caaggtagcc g
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<200>    SEQUENCE CHARACTERISTICS:
<210>    SEQ ID NO: 8
<211>    LENGTH:  1527
<212>    TYPE: DNA
<213>    ORGANISM: Mycobacterium heckeshornense
<400>    SEQUENCE 8

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  61 gcccgcttcg gtgggtgctc gagtggcgaa cgggtgagta acacgtgggt gacctgccct
 121 gcacttcggg ataagcctgg gaaactgggt ctaataccgg ataggaccgc gccatgcatg
 181 tggtgtggtg gaaagcgtgt ggtagtggtg tgggatgggc ccgcggccta tcagcttgtt
 241 ggtggggtga tggcctacca aggcgacgac gggtagccgg cctgagaggg tgtccggcca
 301 cactgggact gagatacggc ccagactcct acgggaggca gcagtgggga atattgcaca
 361 atgggcgcaa gcctgatgca gcgacgccgc gtgggggatg acggccttcg ggttgtaaac
 421 ctctttcacc atcgacgaag ccgcagcttt tgttgtggtg acggtaggtg gagaagaagc
 481 accggccaac tacgtgccag cagccgcggt aatacgtagg gtgcaagcgt tgtccggaat
 541 tactgggcgt aaagagctcg taggcggctt gtcgcgttgt tcgtggaatg ccacagctta
 601 actgtgggcg tgcgggcgat acgggcaggc tggagtgctg caggggagac tggaattcct
 661 ggtgtagcgg tggaatgcgc agatatcagg aggaacaccg gtggcgaagg cgggtctctg
 721 ggcagtaact gacgctgagg agcgaaagcg tggggagcga acaggattag ataccctggt
 781 agtccacgcc gtaaacggtg ggtactaggt gtgggttctt cctgaagga tccgtgccgt
 841 agctaacgca ttaagtaccc cgcctgggga gtacggccgc aaggctaaaa ctcaaaggaa
 901 ttgacggggg cccgcacaag cggcggagca tgtggattaa ttcgatgcaa cgcgaagaac
 961 cttacctggg tttgacatgc acaggacgcg tctagagata ggcgttccct tgtggcctgt
1021 gtgcaggtgg tgcatggctg tcgtcagctc gtgtcgtgag atgttgggtt aagtcccgca
1081 acgagcgcaa cccttgtccc atgttgccag cacgtgatgg tggggactca tgggagactg
1141 ccggggtcaa ctcggaggaa ggtggggatg acgtcaagtc atcatgcccc ttatgtccag
1201 ggcttcacac atgctacaat ggccggtaca aagggctgcg atgccgtgag gttaagcgaa
1261 tccttgtaaa gccggtctca gttcggatcg gggtctgcaa ctcgaccccg tgaagtcgga
1321 gtcgctagta atcgcagatc agcaatgctg cggtgaatac gttcccgggc cttgtacaca
1381 ccgcccgtca cgtcatgaaa gtcggtaaca cccgaagccc atggcccaac ccgtttggga
1441 gggagtggtc gaaggtggga tcggcgattg gacgaagtc gtaacaaggt agccgtaccg
1501 gaaggtgcgg ctggatcacc tccttaa
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<200>    SEQUENCE CHARACTERISTICS:
<210>    SEQ ID NO 9
<211>    LENGTH 1452
<212>    TYPE: DNA
<213>    ORGANISM:  Mycobacterium intracellulare
<400>    SEQUENCE 9

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  61 gtaacacgtg gcaatctgc cctgcacttc gggataagcc tgggaaactg gtctaatac
 121 cggataggac ctttaggcgc atgtctttag gtggaaagct tttgcggtgt gggatgggcc
 181 cgcggcctat cagcttgttg gtggggtgat ggcctaccaa ggcgacgacg gtagccggc
 241 ctgagagggt gtccggccac actgggactg agatacggcc cagactncta cgggaggcag
 301 cagtggggaa tattgcacaa tgggcgcaag cctgatgcag cgacgccgcg tgggggatga
 361 cggccttcgg ttgtaaacc tctttcacca tcgacgaagg tccgggtttt ctcggattga
 421 cggtaggtgg agaagaagca ccggccaact acgtgccagc agccgcggta atacgtaggg
 481 tgcgagcgtt gtccggaatt actgggcgta aagagctcgt aggtggtttg tcgcgttgtt
 541 cgtgaaatct cacggcttaa ctgtgagcgt gcgggcgata cggcagact agagtactgc
 601 aggggagact ggaattcctg gtgtagcggt ggaatgcgca gatatcagga ggaacaccgg
```

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   661 tggcgaaggc gggtctctgg gcagtaactg acgctgagga gcgaaagcgt ggggagcgaa
   721 caggattaga taccctggta gtccacgcng taaacggtgg gtactaggtg tgggtttcct
   781 tccttgggat ccgtgccgta gctaacgcat taagtacccn gcctggggag tacggccgca
   841 aggctaaaac tcaaaggaat tgacgggggc cngcacaagc ggcggagcat gtggattaat
   901 tcgatgcaac gcgaagaacc ttacctgggt ttgacatgca caggacgcgt ctagagatag
   961 gcgttccctt gtggcctgtg tgcaggtggt gcatggctgt cgtcagctcg tgtcgtgaga
  1021 tgttgggtta agtcccgcaa cgagcgcaac ccttgtctca tgttgccagc gggtaatgcc
  1081 ggggactcgt gagagactgc cggggtcaac tcggaggaag gtggggatga cgtcaagtca
  1141 tcatgcccct tatgtccagg gcttcacaca tgctacaatg gccggtacaa agggctgcga
  1201 tgccgcaagg ttaagcgaat ccttttaaag ccggtctcag ttcggattgg ggtctgcaac
  1261 tcgaccccat gaagtcggag tcgctagtaa tcgcagatca gcaacgctgc ggtgaatacg
  1321 ttcccgggcc ttgtacacac cgcccgtcac gtcatgaaag tcggtaacac ccgaagccag
  1381 tggcctaacc cttgggaggg agctgtcgaa ggtgggatcg cgattggga cgaagtcgta
  1441 acaaggtagc cg
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<200>    SEQUENCE CHARACTERISTICS:
<210>    SEQ ID NO 10
<211>    LENGTH 1463
<212>    TYPE: DNA
<213>    ORGANISM:  Mycobacterium kansasii
<400>    SEQUENCE 10

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     1 gcggcgtgct taacacatgc aagtcgaacg gaaaggtctc ttcggagaca ctcgagtggc
    61 gaacgggtga gtaacacgtg ggcaatctgc cctgcacacc gggataagcc tgggaaactg
   121 ggtctaatac cggataggac cacttggcgc atgccttgtg gtggaaagct tttgcggtgt
   181 gggatgggcc cgcggcctat cagcttgttg gtggggtgac ggcctaccaa ggcgacgacg
   241 ggtagccggc ctgagagggt gtccggccac actgggactg agatacggcc cagactccta
   301 cgggaggcag cagtggggaa tattgcacaa tgggcgcaag cctgatgcag cgacgccgcg
   361 tgggggatga cggccttcgg gttgtaaacc tctttcacca tcgacgaagg tccgggttct
   421 ctcggattga cggtaggtgg agaagaagca ccggccaact acgtgccagc agccgcgnta
   481 atacgtaggg tgcgagcgtt gtccggaatt actgggcgta aagagctcgt aggtggtttg
   541 tcgcgttgtt cgtgaaatct cacggcttaa ctgtgagcgt gcgngcgata cgggcagact
   601 agagtactgc aggggagact ggaattcctg gtgtagcggt ggaatgcgca gatatcagga
   661 ggaacaccgg tggcgaaggc gggtctctgg gcagtaactg acgctgagga gcgaaagcgt
   721 ggggagcgaa caggattaga taccctggta gtccacgcng taaacggtgg gtactaggtg
   781 tgggtttcct tccttgggat ccgtgccgta gctaacgcat taagtacccc gcctggggag
   841 tacggcngca aggctaaaac tcaaaggaat tgacgggggn ccgcacaagc ggcggagcat
   901 gtggattaat tcgatgcaac gcgaagaacc ttacctgggt ttgacatgca caggacgcgt
   961 ctagagatag gcgttccctt gtggcctgtg tgcaggtggt gcatggctgt cgtcagctcg
  1021 tgtcgtgaga tgttgggtta agtcccgcaa cgagcgcaac ccttgtctca tgttgccagc
  1081 gggtaatgcc ggggactcgt gagagactgc cggggtcaac tcggaggaag gtggggatga
  1141 cgtcaagtca tcatgcccct tatgtccagg gcttcacaca tgctacaatg gccggtacaa
  1201 agggctgcga tgccgcgagg ttaagcgaat ccttttaaag ccggtctcag ttcggatcgg
  1261 ggtctgcaac tcgacccgt gaagtcggag tcgctagtaa tcgcagatca gcaacgctgc
  1321 ggtgaatacg ttcccgggcc ttgtacacac cgcccgtcac gtcatgaaag tcggtaacac
  1381 ccgaagccag tggcctaacc ctcgggaggg agctgtcgaa ggtgggatcg cgattggga
  1441 cgaagtcgta acaaggtagc cgt
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<200>    SEQUENCE CHARACTERISTICS:
<210>    SEQ ID NO 11
<211>    LENGTH  1321
<212>    TYPE: DNA
<213>    ORGANISM:  Mycobacterium kubicae
<400>    SEQUENCE 11

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   1 gtgcttaaca catgcaagtc gaacggaaag gccccttcgg gggtactcga gtggcgaacg
  61 ggtgagtaac acgtgggtga tctaccctgc acttcgggat aagcctggga aactgggtct
 121 aataccggat aggaccatga gatgcatgtc ttatggtgga aagcttttgc ggtgtgggat
 181 gggcccgcgg cctatcagct tgttggtggg gtgacggcct accaaggcga cgacgggtag
 241 ccggcctgag agggtgtccg gccacactgg gactgagata cggcccagac tcctacggga
 301 ggcagcagtg gggaatattg cacaatgggc gcaagcctga tgcagcgacg ccgcgtgggg
 361 gatgacggcc ttcgggttgt aaacctcttt cagcagggac gaagcgcaag tgacggtacc
 421 tgcagaagaa gcaccggcca actacgtgcc agcagccgcg gtaatacgta gggtgcgagc
 481 gttgtccgga attactgggc gtaaagagct cgtaggtggt ttgtcgcgtt gttcgtgaaa
 541 accgggggct taaccctcgg cgtgcgggcg atacgggcag actggagtac tgcaggggag
 601 actggaattc ctggtgtagc ggtggaatgc gcagatatca ggaggaacac cggtggcgaa
 661 ggcgggtctc tgggcagtaa ctgacgctga ggagcgaaag cgtggggagc gaacaggatt
 721 agataccctg gtagtccacg ccgtaaacgg tgggtactag gtgtgggttt ccttccttgg
 781 gatccgtgcc gtagctaacg cattaagtac cccgcctggg gagtacggcc gcaaggctaa
 841 aactcaaagg aattgacggg ggcccgcaca agcggcggag catgtggatt aattcgatgc
 901 aacgcgaaga accttacctg ggtttgacat gcacaggacg cgtctagaga taggcgttcc
 961 cttgtggcct gtgtgcaggt ggtgcatggc tgtcgtcagc tcgtgtcgtg agatgttggg
1021 ttaagtcccg caacgagcgc aaccccttgtc tcatgttgcc agcgggtaat gccgggggact
1081 cgtgagagac tgccggggtc aactcggagg aaggtgggga tgacgtcaag tcatcatgcc
1141 ccttatgtcc agggcttcac acatgctaca atggccggta caaagggctg cgatgccgcg
1201 aggttaagcg aatccttta aagccggtct cagttcggat cggggtctgc aactcgaccc
1261 cgtgaagtcg gagtcgctag taatcgcaga tcagcaacgc tgcggtgaat acgttcccgg
1321 g
```

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   1 tggagagttt gatcctggct caggacgaac gctggcggcg tgcttaacac atgcaagtcg
  61 aacggaaagg cctcttcgga ggtactcgag tggcgaacgg gtgagtaaca cgtgggtaat
 121 ctgccctgca cttcgggata agcctgggaa actgggtcta ataccggata ggacctttg
 181 gcgcatgcct tttggtggaa agcttttgcg gtgtgggatg ggcccgcggc ctatcagctt
 241 gttggtgggg tgacggccta ccaaggcgac gacgggtagc cggcctgaga gggtgtccgg
 301 ccacactggg actgagatac ggcccagact cctacgggag gcagcagtgg ggaatattgc
 361 acaatgggcg caagcctgat gcagcgacgc cgcgtggggg atgacggcct tcgggttgta
 421 aacctctttc agcagggacg aagcgcaagt gacggtacct gcagaagaag caccgccaac
 481 tacgtgccag cagccgcggt a
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   1 gacgaacgct ggcggcgtgc ttaacacatg caagtcgaac ggaaaggccc ttcggggtac
  61 tcgagtggcg aacgggtgag taacacgtgg gtgatctgcc ctgcactttg ggataagcct
 121 gggaaactgg gtctaatacc gaataggacc acgcgcttca tggtgtgtg tggaaagctt
 181 ttgcggtgtg gatgggcccg cggcctatc agcttgttgg tggggtaatg cctaccaag
 241 gcgacgacgg gtagccggcc tgagagggtg accggccaca ctgggactga gatacggccc
 301 agactcctac gggaggcagc agtggggaat attgcacaat gggcgcaagc ctgatgcagc
 361 gacgccgcgt gagggatgac ggccttcggg ttgtaaacct ctttcaatag gacgaagcg
 421 caagtgacgg tacctataga agaagcaccg gccaactacg tgccagcagc cgcggtaata
```

```
 481 cgtagggtgc gagcgttgtc cggaattact gggcgtaaag agctcgtagg tggtttgtcg
 541 cgttgttcgt gaaaactcac agcttaactg tgggcgtgcg ggcgatacgg gcagactaga
 601 gtactgcagg ggagactgga attcctggtg tagcggtgga atgcgcagat atcaggagga
 661 acaccggtgg cgaaggcggg tctctgggca gtaactgacg ctgaggagcg aaagcgtggg
 721 gagcgaacag gattagatac cctggtagtc cacgccgtaa acggtgggta ctaggtgtgg
 781 gttccttcct tgggatccgt gccgtagcta acgcattaag taccccgcct ggggagtacg
 841 gccgcaaggc taaaactcaa aggaattgac gggggcccgc acaagcggcg gagcatgtgg
 901 attaattcga tgcaacgcga agaaccttac ctgggtttga catgcacagg acgccggcag
 961 agatgtcggt tcccttgtgg cctgtgtgca ggtggtgcat ggctgtcgtc agctcgtgtc
1021 gtgagatgtt gggttaagtc ccgcaacgag cgcaaccctt gtcctatgtt gccagcgggt
1081 tatgccgggg actcgtagga gactgccggg gtcaactcgg aggaaggtgg ggatgacgtc
1141 aagtcatcat gccccttatg tccagggctt cacacatgct acaatggccg gtacaaaggg
1201 ctgcgatgcc gtgaggtgga gcgaatcctt tcaaagccgg tctcagttcg gatcggggtc
1261 tgcaactcga ccccgtgaag tcggagtcgc tagtaatcgc agatcagcaa cgctgcggtg
1321 aatacgttcc cgggccttgt acacaccgcc cgtcacgtca tgaaagtcgg taacacccga
1381 agccggtggc ctaacccttg tggagggagc cgtcgaaggt gggatcggcg attgggacga
1441 agtcgtaaca aggta
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<200>    SEQUENCE CHARACTERISTICS:
<210>    SEQ ID NO 14
<211>    LENGTH 1415
<212>    TYPE: DNA
<213>    ORGANISM:  Mycobacterium paraffinicum
<400>    SEQUENCE 14

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   1 cgtgcttaac acatgcaagt cgaacggaaa ggcccccttcg ggggtactcg agtggcgaac
  61 gggtgagtaa cacgtnngca atctgccctg cacttcggga taagcctggg aaactgggtc
 121 taataccgga taggaccact tggcgcatgc cttgtggtgg aaagctttg cggtgtggga
 181 tgggcccgcg gcctatcagc ttgttggtgg ggtgatggcc taccaaggcg acgacgggta
 241 gccggcctga gagggtgtcc ggccacactg ggactgagat acggcccaga ctcctacggg
 301 aggcagcagt ggggaatatt gcacaatggg cgcaagcctg atgcagcgac gccgcgtggg
 361 ggatgacggc cttcgggttg taaacctctt tcaccatcga cgaaggctca cttcgtgagt
 421 tgacggtagg tggagaagaa gcaccggcca actacgtgcc agcagccgcg gtaatacgta
 481 gggtgcgagc gttgtccgga attactgggc gtaaagagct cgtaggtggt ttgtcgcgtt
 541 gttcgtgaaa tctcacggct taactgtgag cgtgcgggcg atacgggcag actagagtac
 601 tgcaggggag actggaattc ctggtgtagc ggtggaatgc gcagatatca ggaggaacac
 661 cggtggcgaa ggcgggtctc tgggcagtaa ctgacgctga ggagcgaaag cgtggggagc
 721 gaacaggatt agataccctg gtagtccacg ccgtaaacgg tgggtactag gtgtgggttt
 781 ccttccttgg gatccgtgcc gtagctaacg cattaagtac cccgcctggg gagtacggcc
 841 gcaaggctaa aactcaaagg aattgacggg ggcnngnaca agcggcggag catgtggatt
 901 aattcgatgc aacgcgaaga accttacctg ggtttgacat gcacaggacg cgtctagaga
 961 taggcgttcc cttgtggcct gtgtgcaggt ggtgcatggc tgtcgtcagc tcgtgtcgtg
1021 agatgttggg ttaagtcccg caacgagcgc aacccttgtc tcatgttgcc agcgggtaat
1081 gccggggact cgtgagagac tgccggggtc aactcggagg aaggtgggga tgacgtcaag
1141 tcatcatgcc ccttatgtcc agggcttcac acatgctaca atggccggta caaagggctg
1201 cgatccgca aggttaagcg aatcctttta aagccggtct cagttcggat cggggtctgc
1261 aactcgaccc cgtgaagtcg gagtcgctag taatcgcaga tcagcaacgc tgcggtgaat
1321 acgttcccgg ccttgtaca caccgcccgt cacgtcatga aagtcggtaa cacccgaagc
1381 cagtggccta acccttggga gggagctgtc gaagg
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<200>    SEQUENCE CHARACTERISTICS:
<210>    SEQ ID NO 15
<211>    LENGTH 1484
<212>    TYPE: DNA
<213>    ORGANISM:  Mycobacterium simiae

<400> SEQUENCE 15
       1 ggcggcgtgc ttaacanatg caagtcgaac ggaaaggccc cttcgggggt actcgagtgg
      61 cgaacgggtg agtaacacgt gggtaatctg ccctgcactt cgggataagc ctgggaaact
     121 gggtctaata ccggatagga ccacttggcg catgccttgt ggtggaaagc ttttgcggtg
     181 tgggatgggc ccgcggccta tcagcttgtt ggtgggggtga cggcctacca aggcgacgac
     241 gggtagccgg cctgagaggg tgtccggcca cactgggact gagatacggc ccagactnct
     301 acgggaggca gcagtgggga atattgcaca atgggcgcaa gcctgatgca gcgacgccgc
     361 gtgggggatg acggccttcg ggttgtaaac ctctttcagc agggacgaag cgcaagtgac
     421 ggtacctgca gaagaagcac cggccaacta cgtgccagca gccgcggtaa tacgtagggt
     481 gcgagcgttg tcnggaatta ctgggcgtaa agagctcgta ggtggtttgt cgcgttgttc
     541 gtgaaaaccg ggggcttaac cctcggcgtg cgggcgatac gggcagactg gagtactgca
     601 ggggagactg gaattcctgg tgtagcggtg gaatgcgcag atatcaggag gaacaccggt
     661 ggcgaaggcg ggtctctggg cagtaactga cgctgaggag cgaaagcgtg gggagcgaac
     721 aggattagat accctggtag tccacgcngt aaacggtggg tactaggtgt gggtttcctt
     781 ccttggaatc cgtgccgtag ctaacgcatt aagtaccccg cctggggagt acggccgcaa
     841 ggctaaaact caaaggaatt gacggggggnc cgcacaagcg gcggagcatg tggattaatt
     901 cgatgcaacg cgaagaacct tacctgggtt tgacatgcac aggacgccgg cagagatgtc
     961 ggttcccttg tggcctgtgt gcaggtggtg catggctgtc gtcagctcgt gtcgtgagat
    1021 gttgggttaa gtcccgcaac gagcgcaacc cttgtctcat gttgccagcg ggtaatgccg
    1081 gggactcgtg agagactgcc ggggtcaact cggaggaagg tggggatgac gtcaagtcat
    1141 catgcccctt atgtccaggg cttcacacat gctacaatgg ccggtacaaa gggctgcgat
    1201 gccgcaaggt taagcgaatc cttttaaagc cggtctcagt tcggatcggg gtctgcaact
    1261 cgacccccgtg aagtcggagt cgctagtaat cgcagatcag caacgctgcg gtgaatacgt
    1321 tcccgggcct tgtacacacc gcccgtcacg tcatgaaagt cggtaacacc cgaagccagt
    1381 ggcctaacct tttggaggga gctgtcgaag gtgggatcgg cgattgggac gaagtcgtaa
    1441 caaggtagcc gtaccggaag gtgcggctgg atcacctcct ttct


<200>  SEQUENCE CHARACTERISTICS:
<210>  SEQ ID NO 16
<211>  LENGTH 1462
<212>  TYPE: DNA
<213>  ORGANISM:   Mycobacterium szulgai
<400>  SEQUENCE 16
       1 ggcggcgtgc ttaacacatg caagtcgaac ggaaagnccc cttcgggnta ctcgagtggc
      61 gaacgggtga gtaacacgtg gtaatctgc cctgcacttc gggataagcc tgggaaactg
     121 ggtctaatac cggataggac cccgaggcgc atgccttggg gtggaaagct tttgcggtgt
     181 gggatgggcc cgcggcctat cagcttgttg gtggggtgac ggcctaccaa ggcgacgacg
     241 ggtagccggc ctgagagggt gtccggccac actgggactg agatacggcc cagactcnta
     301 cgggaggcag cagtgggga tattgcacaa tgggcgcaag cctgatgcag cgacgccgcg
     361 tgggggatga cggccttcgg gttgtaaacc tctttcacca tcgacgaagg tccgggtttt
     421 ctcggattga cggtaggtgg agaagaagca ccggccaact acgtgccagc agccgcggta
     481 atacgtaggg tgcgagcgtt gtccggaatt actgggcgta agagctcgt aggtggtttg
     541 tcgcgttgtt cgtgaaatct cacggcttaa ctgtgagcgt gcggncgata cgggcagact
     601 ggagtactgc aggggagact ggaattcctg tgtagcngt ggaatgcgca gatatcagga
     661 ggaacaccgg tggcgaaggc gggtctctgg gcagtaactg acgctgagga gcgaaagcgt
     721 ggggagcgaa caggattaga taccctggta gtccacgncg taaacggtgg gtactaggtg
     781 tgggtttcct tccttgggat ccgtgccgta gctaacgcat taagtacccc gcctggggag
     841 tacggcngca aggctaaaac tcaaaggaat tgacggggggn ccgcacaagc ggcggagcat
     901 gtggattaat tcgatgcaac gcgaagaacc ttacctgggt ttgacatgca caggacgcgt
     961 ctagagatag gcgttccctt gtggcctgtg tgcaggtggt gcatggctgt cgtcagctcg
    1021 tgtcgtgaga tgttgggtta agtcccgcaa cgagcgcaac ccttgtctca tgttgccagc
    1081 gggtaatgcc ggggactcgt gagagactgc cggggtcaac tcggaggaag gtggggatga
    1141 cgtcaagtca tcatgcccct tatgtccagg gcttcacaca tgctacaatg gccggtacaa
    1201 agggctgcga tgccgcgagg ttaagcgaat ccttttaaag ccggtctcag ttcggatcgg
    1261 ggtctgcaac tcgacccccgt gaagtcggag tcgctagtaa tcgcagatca gcaacgctgc
    1321 ggtgaatacg ttcccgggcc ttgtacacac cgcccgtcac gtcatgaaag tcggtaacac

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```
  1381 ccgaagccag tggcctaacc cttgggaggg agctgtcgaa ggtgggatcg gcgattggga
  1441 cgaagtcgta acaaggtagc cg
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<200> SEQUENCE CHARACTERISTICS:
<210> SEQ ID NO 17
<211> LENGTH 1416
<212> TYPE: DNA
<213> ORGANISM: Mycobacterium tuberculosis
<400> SEQUENCE 17
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     1 ggcggcgtgc ttaacacatg caagtcgaac ggaaaggtct cttcggagat actcgagtgg
    61 cgaacgggtg agtaacacgt gggtgatctg ccctgcactt cgggataagc ctgggaaact
   121 gggtctaata ccggatagga ccacgggatg catgtcttct ggtggaaagc gctttagcgg
   181 tgtgggatga gcccgcggcc tatcagcttg ttggtggggt gacggcctac caaggcgacg
   241 acgggtagcc ggcctgagag ggtgtccggc cacactggga ctgagatacg gcccagactc
   301 ctacgggagg cagcagtggg gaatattgca caatgggcgc aagcctgatg cagcgacgcc
   361 gcgtggggga tgacggcctt cgggttgtaa acctctttca ccatcgacga aggtccgggt
   421 tctctcggat tgacggtagg tggagaagaa gcaccggcca actacgtgcc agcagccgcg
   481 gtaatacgta gggtgcgagc gttgtccgga attactgggc gtaaagagct cgtaggtggt
   541 ttgtcgcgtt gttcgtgaaa tctcacggct taactgtgag cgtgcgggcg atacgggcag
   601 actagagtac tgcaggggag actggaattc ctggtgtagc ggtggaatgc gcagatatca
   661 ggaggaacac cggtggcgaa ggcgggtctc tgggcagtaa ctgacgctga ggagcgaaag
   721 cgtggggagc gaacaggatt agataccctg gtagtccacg ccgtaaacgg tgggtactag
   781 gtgtgggttt ccttccttgg gatccgtgcc gtagctaacg cattaagtac cccgcctggg
   841 gagtacggcc gcaaggctaa aactcaaagg aattgacggg ggcccgcaca gcggcggag
   901 catgtggatt aattcgatgc aacgcgaaga accttacctg ggtttgacat gcacaggacg
   961 cgtctagaga taggcgttcc cttgtggcct gtgtgcaggt ggtgcatggc tgtcgtcagc
  1021 tcgtgtcgtg atgttgggg ttaagtcccg caacgagcgc aacccttgtc tcatgttgcc
  1081 agcacgtaat ggtggggact cgtgagagac tgccggggtc aactcggagg aaggtgggga
  1141 tgacgtcaag tcatcatgcc ccttatgtcc agggcttcac acatgctaca atggccggta
  1201 caaagggctg cgatccgcg aggttaagcg aatccttaaa agccggtctc agttcggatc
  1261 ggggtctgca actcgacccc gtgaagtcgg agtcgctagt aatcgcagat cagcaacgct
  1321 gcggtgaata cgttcccggg ccttgtacac accgcccgtc acgtcatgaa agtcggtaac
  1381 acccgaagcc agtggcctaa cccttgggag ggagct
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<200> SEQUENCE CHARACTERISTICS:
<210> SEQ ID NO 18
<211> LENGTH 15
<212> TYPE: DNA
<213> ORGANISM: Synthetic construct
<400> SEQUENCE 18
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     TAACACATGCAAGTC
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<200> SEQUENCE CHARACTERISTICS:
<210> SEQ ID NO 19
<211> LENGTH 16
<212> TYPE: DNA
<213> ORGANISM: Synthetic construct
<400> SEQUENCE 19
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     TTAACACATGCAAGTC
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<200> SEQUENCE CHARACTERISTICS:
<210> SEQ ID NO 20
<211> LENGTH 17
<212> TYPE: DNA

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<213>   ORGANISM:   Synthetic construct
<400>   SEQUENCE 20
        CTTAACACATGCAAGTC


<200>   SEQUENCE CHARACTERISTICS:
<210>   SEQ ID NO 21
<211>   LENGTH 18
<212>   TYPE: DNA
<213>   ORGANISM:   Synthetic construct
<400>   SEQUENCE 21
        GCTTAACACATGCAAGTC


<200>   SEQUENCE CHARACTERISTICS:
<210>   SEQ ID NO 22
<211>   LENGTH 17
<212>   TYPE: DNA
<213>   ORGANISM:   Synthetic construct
<400>   SEQUENCE 22
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<400>   SEQUENCE 51
CTTAACACATGCAAG



<200>   SEQUENCE CHARACTERISTICS:
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CTTAACACATGCAAGT



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<400>    SEQUENCE 57
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<400>    SEQUENCE 62
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CCTGATATCTGCGCAT

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<400>    SEQUENCE 71
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<200>    SEQUENCE CHARACTERISTICS:
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<211>    LENGTH 17
<212>    TYPE: DNA
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<400>    SEQUENCE 72
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<200>    SEQUENCE CHARACTERISTICS:
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<211>    LENGTH 16
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<400>    SEQUENCE 73
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<400>    SEQUENCE 74
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<200>    SEQUENCE CHARACTERISTICS:
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<400>    SEQUENCE 75
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<400>    SEQUENCE 76
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<400>    SEQUENCE 77
CCTCCTGATATCTGCGC


<200>    SEQUENCE CHARACTERISTICS:
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<212>    TYPE: DNA
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<400>    SEQUENCE 78
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<400>    SEQUENCE 79
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<400>    SEQUENCE 80
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<400>    SEQUENCE 81
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<200>    SEQUENCE CHARACTERISTICS:
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<400>    SEQUENCE 82
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<200>    SEQUENCE CHARACTERISTICS:
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<211>    LENGTH 21
<212>    TYPE: DNA
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<400>    SEQUENCE 83
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<400>   SEQUENCE 84
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<212>   TYPE: DNA
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<400>   SEQUENCE 85
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<400>   SEQUENCE 86
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<400>   SEQUENCE 87
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<200>   SEQUENCE CHARACTERISTICS:
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<400>   SEQUENCE 88
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<200>   SEQUENCE CHARACTERISTICS:
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<400>  SEQUENCE 91
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<212>  TYPE: DNA
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<400>  SEQUENCE 92
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<400>  SEQUENCE 93
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<400>  SEQUENCE 94
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<400>  SEQUENCE 95
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<400>  SEQUENCE 96
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<400>  SEQUENCE 98
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<400>  SEQUENCE 99
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<400>  SEQUENCE 102
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<200>   SEQUENCE CHARACTERISTICS:
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<212>   TYPE: DNA
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<400>   SEQUENCE 109
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<200>  SEQUENCE CHARACTERISTICS:
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<212>  TYPE: DNA
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<400>  SEQUENCE 115
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<200>  SEQUENCE CHARACTERISTICS:
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<211>  LENGTH 16
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<400>  SEQUENCE 116
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<200>  SEQUENCE CHARACTERISTICS:
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<212>  TYPE: DNA
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<400>  SEQUENCE 117
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<200>  SEQUENCE CHARACTERISTICS:
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<212>  TYPE: DNA
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<400>  SEQUENCE 118
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<400>   SEQUENCE 119
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<200>   SEQUENCE CHARACTERISTICS:
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<400>   SEQUENCE 125
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<200>   SEQUENCE CHARACTERISTICS:
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<200>   SEQUENCE CHARACTERISTICS:
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<212>   TYPE: DNA
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<400>   SEQUENCE 130
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<200>   SEQUENCE CHARACTERISTICS:
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<211>   LENGTH 18
<212>   TYPE: DNA
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<200>   SEQUENCE CHARACTERISTICS:
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GCTCGTTGCGGGACTTAACC

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